Butterfly Conservation

Saving butterflies, moths and their habitats

MOTHS COUNT

**Vapourer** May-Sep

R. Thompson

# caterpillars
## a brief guide

Although many caterpillars are plain green and go unnoticed, others have amazing colours, beautiful markings or weird shapes.

## Garden plants for caterpillars

A garden with a greater variety of plants is likely to be home to more types of caterpillar. The widest range is found on native trees, especially willow, birch and oak, if you have room. A mixed hedge of hawthorn, blackthorn, hazel, barberry, beech, spindle and privet will support many species, particularly if not trimmed too often. Fruit trees and bushes are also good, especially apple, plum and currant. If you have a wall or fence to cover, the best climbers are roses, honeysuckle (*Lonicera*), clematis, hop and ivy.

One of the best (and easiest!) things you can do is leave an area wild with a mix of native grasses allowed to grow long and common 'weeds', particularly docks, bramble, plantains, dandelions, nettles, bedstraws and bird's-foot-trefoils. It is very beneficial to limit management of the whole garden: restricting pesticide use, tolerating a few weeds and leaving some old vegetation to provide places for the caterpillars to hide, pupate or overwinter.

A few native plants which are used by caterpillars are attractive enough for beds and borders, including foxglove, primrose and thyme. Some garden plants may suit some caterpillars, but chances may be higher with plants which are related to local native or naturalised species. Try cultivated forms of mulleins (*Verbascum*), saxifrages (*Saxifraga*), dead-nettles (*Lamium*), yarrows (*Achillea*), knapweeds (*Centaurea*) and valerians (*Centranthus*). The flowers of the last three are also good sources of nectar for adult moths and butterflies.

## Rearing caterpillars

One way to identify a difficult caterpillar is to rear it to the adult stage, which may be easier to recognise. If you want to try this, you will need to note what kind of plant the caterpillar was on and provide the same type of leaves for it to eat.

Caterpillars can be reared in a ventilated plastic container large enough for a few stems of the food-plant. Place it out of direct sunlight to avoid overheating. Keep the leaves fresh by putting the stems in a little water and replace them every day. A piece of paper towel in the base will help to absorb condensation. Hygiene is vital, so all droppings must be removed daily, along with old leaves and other debris.

Some caterpillars will pupate fastened to a plant stem, but you should also provide some soil or leaf litter for them to bury themselves for pupation.

Pupae are best kept somewhere that is sheltered and frost-free but unheated, such as a garage or shed. It can be difficult to achieve the required humidity and temperature, but if you are lucky the adult will eventually emerge. The timing for this will vary with the species, from a few weeks to a year.

## Images

**The caterpillars illustrated are not to scale. The months indicate the period when the species occurs in the caterpillar stage. Note that some species continue as caterpillars through the winter.**

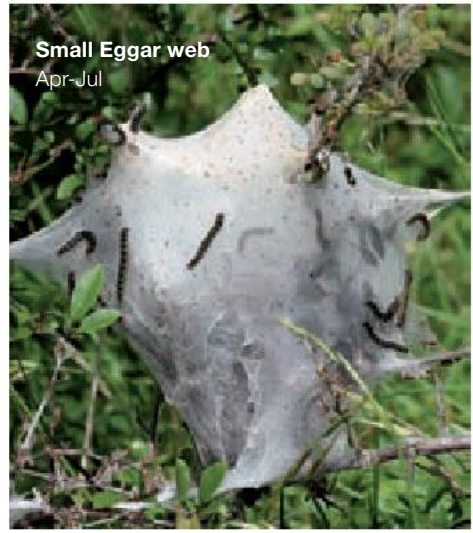
Some species use silk to fasten leaves together and hide inside to eat. Others spin a large silk web which protects a whole brood of caterpillars.

Some caterpillars make less effort to hide themselves as they have developed other means of discouraging predators, such as a bitter taste or unpleasant hairs or bristles to irritate the throat. (As some can irritate human skin or lungs, it is wiser not to handle any hairy caterpillar.) Many such caterpillars are conspicuous as they use bright colours to warn that they are distasteful.

A few large moth species have evolved caterpillars with eye-like markings, spikes that resemble stings, or weird postures, all designed to scare off predators although they are actually harmless.

**Scalloped Hazel**
Jun-Sep

**Swallow-tailed Moth**
Aug-Jun


**Small Eggar web**
Apr-Jul

The time taken for caterpillars to reach full size varies with the species, from a few weeks to a few years. When fully grown a caterpillar turns into a pupa, with a tough outer case inside which the adult moth or butterfly forms and from which it will emerge. Many caterpillars burrow into soil to pupate, others fasten themselves to a plant. Some spin a silk cocoon and pupate inside it for extra protection.

In many cases the pupa is the stage that overwinters, although more species pass the winter as caterpillars, while some overwinter as adults and a few as eggs.

**Comma pupa**

## About caterpillars

If you find a caterpillar it is more likely to be a moth than a butterfly, as there are over 2,500 types of moth in Britain but fewer than 70 butterflies. A great many caterpillars are hard to identify as they are plain green or brown. This leaflet shows some moth caterpillars (and a few butterflies) that are relatively widespread or noticeable and have features that make them easier to recognise. Even so, they can be confused with some other species (for example there are several types of Burnet which look similar, and a Buff Ermine caterpillar looks very like a White Ermine). More images can be seen in the resources listed at the end of the leaflet or at **www.mothscount.org**

Female moths and butterflies lay eggs from which caterpillars hatch. Most eggs are laid on a suitable plant, often singly or sometimes in a batch. Some caterpillars can eat a wide range of plants but most are restricted to certain types, so the plant it is found on can be a very useful clue to a caterpillar's identity. Usually it is the leaves that are eaten, but there are caterpillars which eat the flowers, fruits, roots or stems of plants. The caterpillars of many small moths burrow inside the leaves, where their tunnels form visible 'leaf mines', even though the tiny caterpillars are hard to see.

A caterpillar's purpose in life is to eat and grow, as this is the only stage in the life-cycle where growth is possible. However, a caterpillar's skin cannot stretch to allow gradual growth, but instead must be split and moulted so that the caterpillar can expand in stages called 'instars'.

As well as increasing in size, each instar may also change in colour and other features, which complicates identification.

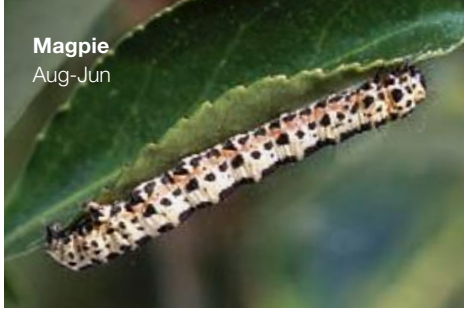
Caterpillars are also important food for a range of other animals, especially birds. Consequently they have evolved ways of avoiding predators. One very common method is camouflage to blend into their background, which is why so many caterpillars are green or brown. Some have elaborate markings to imitate their food-plants more closely.

Others have evolved body shapes that resemble their background. A large family of moths have caterpillars which look like twigs. They are called 'geometrids' (from the Greek for 'ground' and 'measure') after their looping walk. The Scalloped Hazel and Swallow-tailed Moth are shown, but many others look similar.

**Leaf mine** (*Stigmella lapponica*)

Some caterpillars have bold patterns or odd shapes to disguise their outlines. A few attach bits of leaf to their bodies to improve their camouflage. Others, such as the group called bagworms, construct complete casings which they live inside and carry around with them.

**Poplar Hawk-moth**
Jun-Sep


**Magpie**
Aug-Jun

**Jersey Tiger**
Sep-May

**Red Admiral**
Jun-Nov

**Peacock**
May-Jul

**Garden Tiger**
Aug-Jun

**Privet Hawk-moth**
Jul-Sep

**Buff Ermine**
Jul-Oct

**Cinnabar**
Jul-Sep

**Lobster Moth**
Jun-Sep

**Drinker**
Aug-Jun

**Narrow-bordered Five-spot Burnet**
Jul-Jun

**Lime Hawk-moth**
Jun-Sep

**Puss Moth**
Jul-Sep

**Comma**
May-Aug

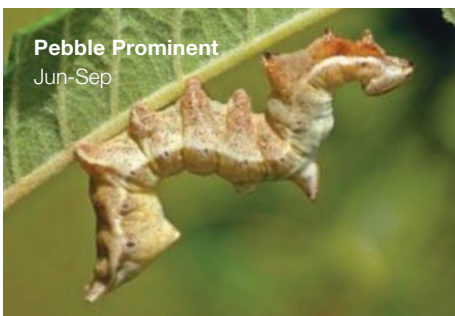
**Emperor Moth**
May-Aug

**Oak Eggar**
Jul-Jun

**Beautiful Yellow Underwing**
Apr-Oct

**Fox Moth**
Jun-Apr

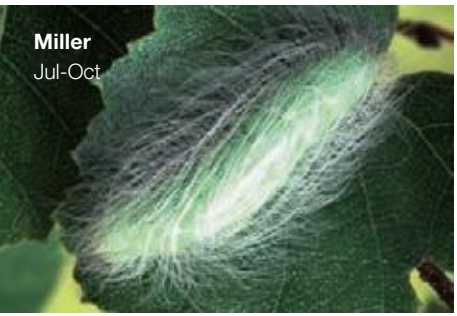
**Yellow-tail**
Aug-Jun


**Pebble Prominent**
Jun-Sep

**Small Tortoiseshell**
May-Aug

**Grey Dagger**
Jul-Nov

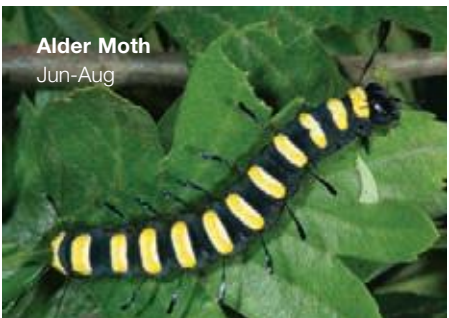
**Pale Tussock**
Jun-Oct


**Miller**
Jul-Oct

**Elephant Hawk-moth**
Jun-Sep

**Knot Grass**
Jun-Oct

**Buff-tip**
Jul-Oct


**Alder Moth**
Jun-Aug

**Mullein**
May-Jul

**Poplar Kitten**
Jun-Sep

**Scarlet Tiger**
Aug-May

**Eyed Hawk-moth**
Jun-Sep

**Broom Moth**
Jun-Sep

**Small White**
May-Nov

**Large White**
May-Dec

**Sycamore**
Jul-Sep

## Further information

You can find more information about moths and caterpillars on the Moths Count website at **www.mothscount.org**, which also has links to other web sources. Useful books on caterpillars include:

**The Colour Identification Guide to Caterpillars of the British Isles**
Porter, J. 1997 (Viking)

**Field Guide to the Caterpillars of Britain and Europe**
Carter, D. & Hargreaves, B. 2001 (Collins)

**British Moths & Butterflies: a photographic guide**
Manley, C. 2008 (A&C Black)

Butterfly Conservation is working to save butterflies, moths and their habitats.
Why not become a member?
More information at
**www.butterfly-conservation.org**

Moths Count is a partnership of many organisations, individuals and businesses, led by Butterfly Conservation. Principal funders include the Heritage Lottery Fund, Butterfly Conservation, British Entomological and Natural History Society, City Bridge Trust, Countryside Council for Wales, Environment Agency, Natural England, Northern Ireland Environment Agency, Royal Entomological Society, RSPB and Scottish Natural Heritage. Many other organisations are involved, providing support and helping to host events. Full details at:

## www.mothscount.org

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D. Green